



業績目録(小山富男)

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小山 富男 助教 業績目録

平成 27 年 3 月
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小山 富男

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出身学校	信州大学・理学部・物理学	1973年	卒業
出身大学院	東北大学・理学研究科・物理学 博士課程	1979年	修了
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国際会議 発表・講演

Josephson Effect in Ferromagnetic Superconductors[Sixth Taniguchi International Symposium on Condensed Matter Physics]

(1983年11月14日 -- 1983年11月18日, 日本国 , 賢島) 口頭 (招待・特別)

Proximity Effects in High T_c Superconductors[The International Seminar on Superconducting Fluctuations and Related Phenomena]

(1992年11月13日 -- 1992年11月14日, 日本国 , 箱根) 口頭 (招待・特別)

Plasma Excitation by Vortex Flow[The 7th US-Japan Workshop on High-T_c Superconductors]

(1995年10月24日 -- 1995年10月25日, 日本国 , 筑波) 口頭 (招待・特別)

Effect of Internal Orbital Motion in 2D d-Wave Superconductors[POSTECH Workshop on the Physics of Strongly Correlated System and Quantum Field Theory]

(1995年11月24日 -- 1995年11月25日, 韓国 , Pohang) 口頭 (招待・特別)

I-V Characteristics and Longitudinal Josephson Plasma in Intrinsic Layered Superconductors[SPIE Conference Oxides Superconductors/SPIE 43rd Annual Meeting]

(1998年7月19日 -- 1998年7月24日, アメリカ合衆国 , San Diego) 口頭 (招待・特別)

Theory for the Longitudinal Collective Modes in Josephson-Coupled High-T_c Superconductors[Workshop on Intrinsic Josephson Phenomena-Josephson Plasma and I-V Characteristics]

(1998年12月2日 -- 1998年12月4日, 日本国 , 東京) 口頭 (招待・特別)

Longitudinal Plasma Oscillations and Single Cooper-pair Tunneling in an Intrinsic Josephson Junction Array[2nd International Symposium "Intrinsic Josephson Effects and Plasma Oscillations in High-T_c Superconductors"]

(2000年8月22日 -- 2000年8月24日, 日本国 , 仙台) 口頭 (招待・特別)

Friedel Oscillation in a Vortex State of Type II Superconductors[New Theories, Discussion and Applications of Superconductors and Related Materials]

(2003年1月16日 -- 2003年1月21日, アメリカ合衆国 , San Diego) 口頭 (招待・特別)

Charge and Phase Dynamics in a Stack of Intrinsic Josephson Junctions[Highlights in Condensed Matter Physics]

(2003年5月9日 -- 2003年5月11日, イタリア , Salerno) 口頭 (招待・特別)

Phenomenological Quantum Phase Dynamics of Compact 0- π Josephson Junction System[The 2nd CREST-NANOFAB Workshop NFS2004]

(2004年12月1日 -- 2004年12月2日, 日本国 , 大阪) 口頭 (招待・特別)

Correction due to the Goldstone Mode in Neutral BCS Superconductors [Forth International Conference on Vortex Matter in Nanostructured Superconductors]

(2005年9月2日 -- 2005年9月9日, ギリシア, Creta) 口頭 (招待・特別)

Quantum Dynamics in Micro 0-pi Josephson Junctions [CREST Nano-Virtual-Labs Joint Workshop on Superconductivity]

(2005年12月20日 -- 2005年12月22日, 日本国, 淡路) 口頭 (招待・特別)

Theory of Macroscopic Quantum Tunneling in a Stack of Capacitively Coupled Intrinsic Josephson Junctions [International Conference on Mesoscopic Superconductors and Magnetism]

(2006年8月28日 -- 2006年9月1日, アメリカ合衆国, Chicago) 口頭 (招待・特別)

Macroscopic Quantum Tunneling in a Stack of Intrinsic Josephson Junctions [Fifth International Conference on Vortex Matter in Nanostructured Superconductors]

(2007年9月8日 -- 2007年9月14日, ギリシア, Rhodes) 口頭 (招待・特別)

Classical and Quantum Phase Dynamics in Intrinsic Josephson Junctions [2nd International Autumn Seminar on Nanoscience and Engineering in Superconductivity for Young Scientists]

(2007年11月25日 -- 2007年12月2日, 日本国, 那須) 口頭 (招待・特別)

Macroscopic Quantum Tunneling in Intrinsic Josephson Junction Stacks [The 4th CREST Nano-Virtual Labs Joint Workshop on Superconductivity]

(2007年12月17日 -- 2007年12月18日, 日本国, 北九州市) 口頭 (招待・特別)

Theory for THz Emission in Intrinsic Josephson Junctions [International Conference on Theoretical Physics "DUBNA-NANO 2008"]

(2008年7月7日 -- 2008年7月11日, ロシア, Dubna) 口頭 (招待・特別)

Electromagnetic Wave Emission in Intrinsic Josephson Junction Stacks [6th International Symposium in Intrinsic Josephson Effects in High-Tc Superconductors]

(2008年7月17日 -- 2008年7月19日, 韓国, Pohang) 口頭 (招待・特別)

Numerical Simulation for THz Wave Emission from Intrinsic Josephson Junction Stacks [Joint JSPS-ESF International Conference on Nanoscience and Engineering in Superconductivity]

(2009年3月23日 -- 2009年3月26日, 日本国, 筑波) 口頭 (招待・特別)

Numerical Simulations for Electromagnetic Wave Emission from a Thin Film Device of Intrinsic Josephson Junctions [The 7th International Symposium on Intrinsic Josephson Effects and Plasma Oscillations in High-Tc Superconductors]

(2010年4月29日 -- 2010年5月2日, 日本国, 弘前) 口頭 (招待・特別)

Electrodynamics and Intrinsic Josephson Effects in Multi-Gap Superconductors [International Conference on Theoretical Physics "DUBNA=NANO 2010"]

(2010年7月5日 -- 2010年7月10日, ロシア, Dubna) 口頭 (招待・特別)

Numerical Simulations for THz Emission in IJJ's [2nd JST-DFG Workshop on Terahertz Superconductor Electronics]

(2011年10月16日 -- 2011年10月18日, ドイツ, Blaubeuren) 口頭 (招待・特別)

Numerical Study for the Electromagnetic Wave Emission in Intrinsic Josephson Junctions [Pathbreaking Phase Science in Superconductivity 2012]

(2012年1月13日 -- 2012年1月15日, 日本国, 大阪) 口頭 (招待・特別)

Numerical Study for Electromagnetic Wave Emission from Intrinsic Josephson Junction Stacks with a Dielectric Cover [The 8th International Symposium on Intrinsic Josephson Effects and Plasma Oscillations in High-Tc Superconductors]

(2012年6月10日 -- 2012年6月13日, トルコ, Izmir) 口頭 (招待・特別)

Electric Field Effect and THz Emission in Intrinsic Josephson Junctions [Workshop on THz Radiation from Intrinsic Josephson Junctions]

(2013年3月10日 -- 2013年3月10日, 日本国, 京都) 口頭 (招待・特別)

国内会議 発表・講演

テラヘルツ波発振をもたらす固有ジョセフソン内の電磁場 [日本物理学会第64回年次大会]

(2009年3月27日 -- 2009年3月30日, 東京都) 口頭 (招待・特別)

シンポジウム「超伝導位相制御：量子化・ダイナミクスの物理と応用展開」 [日本物理学会第68回年次大会]

(2013年3月26日 -- 2013年3月29日, 広島) 口頭 (招待・特別)

国際会議 主催・運営

2nd International Symposium on Intrinsic Josephson Effect and Plasma Oscillation in High-Tc Superconductors

(2000年8月22日 -- 2000年8月24日, 日本国, 仙台) [運営] プログラム委員

The 1st NANOFAB Workshop "Theoretical Developments of Nanosuperconductors and its Applications

(2003年11月11日 -- 2003年11月12日, 日本国, 京都) [主催]

International Conference on Theoretical Physics: DUBNA-NANO2008

(2008年7月7日 -- 2008年7月12日, ロシア, Dubna) [運営] International Advisory Committee

The 7th International Symposium on Intrinsic Josephson Effects and Plasma Oscillations in High-Tc Superconductors

(2010年4月29日 -- 2010年5月2日, 日本国, 弘前) [運営] International Advisory Committee

International Conference on Theoretical Physics "DUBNA-NANO 2010"

(2010年7月5日 -- 2010年7月10日, ロシア, Dubna) [運営] International Advisory Committee

International Conference on Theoretical Physics: DUBNA-NANO2012

(2012年7月9日 -- 2012年7月14日, ロシア, Dubna) [運営] International Advisory Committee

国内会議 主催・運営

第21回渦糸物理国内会議

(2013年12月12日 -- 2013年12月14日) [主催] 組織委員

科学研究費補助金獲得実績 (文科省・学振)

基盤研究 (C)

1999年4月 - 2001年3月

[高温超伝導体における固有ジョセフソン効果と集団励起の理論的研究]

基盤研究 (C)

2004年4月 - 2006年3月

[ナノ超伝導体の超伝導状態に対する理論的研究]

基盤研究 (C)

2005年4月 - 2007年3月

[量子原子気体における B E C / B C S 状態の理論的研究]

基盤研究 (C)

2006年4月 - 2008年3月

[量子流体及び超伝導体中の量子渦糸ダイナミクス]

基盤研究 (C)

2006年4月 - 2008年3月

[ナノ超伝導の新奇渦糸状態の相互作用]

基盤研究 (C)

2007年4月 - 2009年3月

[固有ジョセフソン多重接合における協力的巨視的量子効果の研究]

基盤研究 (C)

2010年4月 - 2013年3月

[多ギャップ固有ジョセフソン接合におけるジョセフソン効果とレゲットモード]

基盤研究 (C)

2014年4月 - 2017年3月

[多バンド超伝導体バルク・表面・接合におけるヒッグス・モード]

その他の競争資金獲得実績

戦略的創造研究推進事業

2002年11月 - 2007年10月

[超伝導ナノファブリケーションによる新奇物性と応用]

戦略的創造研究推進事業

2006年10月 - 2012年3月

[超伝導新奇応用のためのマルチスケール・マルチフィジックスシミュレーションの基盤構築]

著書

- 1) Superconductivity in Magnetic and Exotic Materials (執筆担当部分) pp.75-84. [Springer-Verlag,(1984)]
T. Koyama and M. Tachiki
- 2) Coherence in High Temperature Superconductors (執筆担当部分) pp.371-392. [World Scientific,(1996)]
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- 3) Recent Research Development in Physics vol.5 (執筆担当部分) pp.955-974. [Transworld Research Network,(2004)12月]
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- 4) Superconductors-Materials: Properties and Applications (執筆担当部分) Chap. 13. pp.319-342. [In-Tech,(2012)10月]
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研究論文

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M. Tachiki and T. Koyama
- 2) Anisotropy of Flux-Line Lattice in Cubic Superconductors. [Phys. Rev. B, **20**, (1979), 918-934]
T. Koyama, M. Tachiki, H. Matsumoto and H. Umezawa
- 3) Spin Wave Spectrum in the Spin-Spiral State of Ferromagnetic Superconductors. [J. Phys. Soc. Jpn, **49**, (1980), 2144-2151]
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- 4) Spin Fluctuations and Ultrasonic Attenuation in Magnetic Superconductors. [Solid State Commun., **34**, (1980), 269-273]
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- 5) Self-induced Vortices in Magnetic Superconductors. [Solid State Commun., **34**, (1980), 19-23]
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- 6) Mixed State in Antiferromagnetic Superconductors. [Phys. Rev. B, **24**, (1981), 3830-3840]
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- 7) Effective Exchange Interaction Near the Surface in Ferromagnetic Superconductors. [J. Phys. Soc. Jpn., **50**, (1981), 3254-3261]
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T. Koyama and M. Tachiki
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M. Tachiki, T. Koyama and S. Takahashi
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M. Tachiki, S. Takahashi and T. Koyama
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- 25) Theory of Nuclear Relaxation in Superconducting High-T_c Oxides. [Phys. Rev. B, **39** (4), (1989), 437-451]
T. Koyama and M. Tachiki
- 26) Appearance of Narrow Band with the Hole Doping in High-T_c Superconductors. [Physica C, **162-164**, (1989), 1509-1510]
T. Koyama and M. Tachiki
- 27) Anomalous Temperature Dependence of H_{c1} in Layered Superconductors. [Physica C, **168**, (1990), 69-78]
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- 28) Anomalous Enhancement of H_{c1} in Layered Copper Oxide Superconductors. [Physica B, **165-166**, (1990), 1105-1106]
T. Koyama, N. Takezawa and M. Tachiki
- 29) Flux Line in Layered Superconductors. [Physica C, **172**, (1991), 501-513]
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- 30) Magnetization Process in Layered Superconductors under a Magnetic Field Parallel to the Layers. [Physica C, **176**, (1991), 567-574]
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- 31) Spiral Vortex in Anisotropic Superconductors. [Solid State Commun., **79**, (1991), 1049-1052]
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- 32) Properties of Flux Lines in Cuprate Superconductors. [Physica C, **185-189**, (1991), 303-308]
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- 35) New Continuous Model for Intrinsic Layered Superconductors. [Physica C, **194**, (1992), 20-30]
T. Koyama, N. Takezawa, Y. Naruse and M. Tachiki
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- 39) Properties of High T_c Superconductors Related to Their Layered Structure. [Chinese J. Phys., **31**, (1993), 893-901]
M. Tachiki, S. Takahashi and T. Koyama
- 40) Electromagnetic Phenomena Related to a Low-Frequency Plasma in Cuprate Superconductors. [Phys. Rev. B, **30**, (1994), 7065-7084]
M. Tachiki, T. Koyama and S. Takahashi
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- 42) Low Frequency Plasma in Cuprate Superconductors and Related Phenomena. [SPIE proc., **2157**, (1994), 84-92]
M. Tachiki, S. Takahashi and T. Koyama
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M. Tachiki, T. Koyama and S. Takahashi
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- 50) Intrinsic Josephson Coupling and Josephson Plasma in High T_c Superconductors. [Advances in Superconductivity, **9**, (1996), 139-145]
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- 52) Some Exotic Phenomena Related to Vortices in High T_c and Heavy Fermion Superconductors. [Physica C, **263**, (1996), 1-11]
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- 56) AC Josephson Effects in Intrinsic Layered Superconductors. [Proc. 9th Int. Symp. Superconductivity(ISS'96), (1997), 299-302]
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- 57) Longitudinal Josephson-Plasma Excitation in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+d}$: Direct Observation of the Nambu-Goldstone Mode in a Superconductor. [Phys. Rev. B, **B56**, (1997), 5617-5621]
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- 69) Dynamical Breaking of the Charge Neutrality in Intrinsic Josephson Junction. [Phys. Rev. Lett., **83**, (1999), 4618-4621]
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